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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 02/11/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/639,990

Applicant(s)

TANIDA ET AL.

Examiner

Yogesh K Aggarwal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogata (JP Patent # 05100186).

[Claim 1]

An image input apparatus comprising:

a photoelectric converter element having a flat photosensitive surface (figure 1: photoelectric element 'd'); and

an image formation unit array having a plurality of image formation units arranged in an array (figure 2: lens 1),

wherein the plurality of image formation units individually receive light beams substantially from an identical area and focus the received light beam on different regions of the photosensitive surface of the photoelectric converter element to form images thereon [Figure 1 discloses the plurality of microlenses 1 which are the image formation units receive light from an area and focus onto the plurality of photodetecting portions d].

[Claim 2]

An image input apparatus as claimed in claim 1,

wherein the individual images formed on the different regions are images of an object lying in the area as seen from different viewpoints [The plurality of microlenses 1 which are the image

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formation units receive light from different areas can be read as light received from different viewpoints].

[Claim 9]

An image input apparatus as claimed in claim 1, further comprising: a signal processing system for processing signals obtained as a result of photoelectric conversion performed by the photoelectric converter element by using processing functions provided one for each of the plurality of image formation units [It is inherent that in order for the output of each pixel to be useful the output of each of the photoelectric converter elements be processed in order to produce an image].

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogata (JP Patent # 05100186) in view of Nakai (US Patent # 5,396,090).

[Claim 3]

Ogata teaches the limitation of claim 1 but fails to teach "...a restricting member for restricting, independently for each of the plurality of image formation units, optical paths along which the light beams are focused. However this limitation is well known in the art as taught in Nakai (col. 6 lines 13-16, Figure 4c and 5: 51 is a restricting member, figure 4c: 5 is an image formation

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unit). Therefore taking the combined teachings of Ogata and Nakai it would have been obvious to one skilled in the art to have a restricting member for restricting, independently for each of the plurality of image formation units. Doing so would prevent unnecessary light from entering into adjacent photodetecting portions 2 as taught in Nakai (col. 6 lines 13-16).

[Claim 4]

An image input apparatus as claimed in claim 3, wherein the restriction member is realized as partition walls (Nakai, col. 6 lines 13-16, figure 4c and 5: 51).

[Claim 5]

An image input apparatus as claimed in claim 4 “.... wherein those pixels of the photoelectric converter element, which output a bright-state signal when light enters the plurality of image formation units, are regarded as effective pixels”. [Any photoelectric element in a pixilated image sensor such as Ogata, which outputs a bright state signal when bright light is incident thereon, is inherently regarded as an effective pixel].

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogata (JP Patent # 05100186) in view of Japanese application # S59-50042.

[Claim 7]

Ogata teaches the limitation of claim 1 but fails to teach “.... wherein deflecting members provided one for each of the plurality of image formation units”. However this limitation is well known in the art as taught in Japanese application # S59-50042. [Figure 2 discloses a pinhole mask 40 with a slight shift from the mask 32 be used to provide deflecting members one for each of the plurality of image formation units 30 so as to provide a shutter element for the device taught in Ogata]. Therefore it would have been obvious to one skilled in the art to have a

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deflecting member mask 40 placed one for each of the plurality of image formation units. Doing so would allow the pinhole mask to be used as a shutter element when the pinhole mask is shifted for the device taught in Ogata.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogata (JP Patent # 05100186) in view of Enomoto (US Patent # 5,321,297).

[Claim 8]

Ogata teaches the limitations of claim 1 but fails to teach "... spectroscopic members provided one for each of the plurality of image formation units". However this limitation is well known in the art as taught in Enomoto (col. 1 lines 30-37 figure 13A: 4sub1, 4 sub2, 4sub3)[4sub1, 4 sub2, 4sub3 are color filters formed on the surface of each one of a plurality of photodiodes 2 for each of the primary colors red, green and blue respectively]. Therefore it would have been obvious to one skilled in the art to have spectroscopic members provided one for each of the plurality of image formation units in the microlens system taught by Ogata in order to split the light into its primary colors of red, green and blue respectively so as to provide a color imaging capability as taught by Enomoto (col. 1 lines 30-37).

Allowable Subject Matter

7. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

a) As for claim 6, the prior art of record does not teach or fairly suggests an image input apparatus wherein the restricting member is a polarizing filter array having polarizing filters

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arranged one for each group of the plurality of image formation units, every two adjacent polarizing filters having mutually perpendicular polarization angles.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K Aggarwal whose telephone number is (703) 308-9644. The examiner can normally be reached on M-F 8:00AM-4: 30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

YKA
February 2, 2004



ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600